

## CLAIMS

1. A polypeptide comprising one or more of: (a) an amino acid sequence selected from the group consisting of SEQ ID NOS: 51, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 54; (b) an amino acid sequence having at least 70% identity a sequence as defined in (a); and/or (c) an amino acid sequence comprising a fragment of at least 8 consecutive amino acids of a sequence as defined in (a).
2. The polypeptide of claim 1, wherein the fragment of (c) does not include one or more of four domains of the sequence of (a).
3. The polypeptide of claim 1, wherein the fragment of (c) includes at least one complete domain of the sequence of (a).
4. The polypeptide of any preceding claim, in oligomeric form.
5. A polypeptide of the formula  $\text{NH}_2 \text{ A-}\{-\text{X-L-}\}_x\text{-B-COOH}$ , wherein: X comprises an amino acid sequence: (a) having at least 70% identity to one or more of SEQ ID NOS: 1-18, 51 & 54; and/or (b) which is a fragment of at least 8 consecutive amino acids of one or more of SEQ ID NOS: 1-18, 51 or 54; L is an optional linker amino acid sequence; A is an optional N terminal amino acid sequence; B is an optional C terminal amino acid sequence; and x is 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 or 20.
6. A polypeptide comprising the amino acid sequence  $\text{-A-W}_1\text{-W}_2\text{-W}_3\text{-W}_4\text{-B-}$ , wherein:
  - A is an optional N-terminus sequence;
  - B is an optional C-terminus sequence;
  - $\text{W}_1$  is an optional amino acid sequence: (a) having at least 70% identity to the leader peptide of one or more of SEQ ID NOS: 1-18 & 51; and/or (b) which is a fragment of at least 8 consecutive amino acids of the leader peptide of one or more of SEQ ID NOS: 1-18 & 51;
  - $\text{W}_2$  is an optional amino acid sequence: (a) having at least 70% identity to the globular head of one or more of SEQ ID NOS: 1-18 & 51; and/or (b) which is a fragment of at least 8 consecutive amino acids of the leader peptide of one or more of SEQ ID NOS: 1-18 & 51;
  - $\text{W}_3$  is an optional amino acid sequence: (a) having at least 70% identity to the coiled-coil domain of one or more of SEQ ID NOS: 1-18 & 51; and/or (b) which is a fragment of at least 8 consecutive amino acids of the leader peptide of one or more of SEQ ID NOS: 1-18 & 51;
  - $\text{W}_4$  is an optional amino acid sequence: (a) having at least 70% identity to the transmembrane anchor region of one or more of SEQ ID NOS: 1-18 & 51; and/or (b) which is a fragment of at least 8 consecutive amino acids of the leader peptide of one or more of SEQ ID NOS: 1-18 & 51;
 provided that at least one of  $\text{W}_1$ ,  $\text{W}_2$ ,  $\text{W}_3$  or  $\text{W}_4$  is present.

7. An adhesin from *Haemophilus aegyptius*, wherein the adhesin comprises: (a) amino acid sequence SEQ ID NO: 52; (b) an amino acid sequence having at least 70% identity to SEQ ID NO: 52; and/or (c) an amino acid sequence which is a fragment of at least 8 consecutive amino acids of SEQ ID NO: 52.
- 5 8. Antibody that bind to the polypeptide of claim 1.
9. Nucleic acid encoding the polypeptide of claim 1 or the antibody of claim 8.
10. A pharmaceutical composition comprising a polypeptide and/or a nucleic acid and/or an antibody of any preceding claim.
11. The composition of claim 10, for use as a medicament.
- 0 12. The use of the polypeptide of claim 1 in the manufacture of a medicament for raising an immune response in a mammal.
13. A method for raising an immune response in a mammal comprising the step of administering an effective amount of the composition of claim 10.